

**ABSTRACT OF THE DISCLOSURE**

A method includes transmitting a Domain Name Service (DNS) query from a user terminal; receiving the DNS query with at least one satellite in earth orbit; and applying the DNS query to a DNS server that is on-board the at least one satellite to obtain a corresponding Internet Protocol (IP) address. The method further operates, in the event the DNS server is unable to obtain the corresponding IP address, to transmit the DNS query to another DNS server, which may be located in another satellite, such as a higher altitude satellite, or to a terrestrial DNS server, such as one at a gateway or one reachable through the Internet. The method further operates to update the DNS server database that is on-board the satellite with information received from a terrestrial DNS server and/or from a space-based DNS server. In a further method the user terminal transmits a message containing a Uniform Resource Locator (URL); the message is received with at least one satellite in earth orbit; and a processor of the satellite generates, in response to the URL, a DNS query to a DNS server that is on-board the at least one satellite to obtain a corresponding Internet Protocol (IP) address. In the event the DNS server is unable to obtain the corresponding IP address, the processor transmits the DNS query to another DNS server located on-board another satellite, or to a terrestrially-located DNS server. A further operation performed by the method forwards the message to an Internet destination server having an address that corresponds to the IP address.